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ABSTRACT

The evolution of the "planning process" from the 1940s to the present is considered, especially as it relates to higher education. It was hypothesized that institutional planning has experienced historical evolution: new planning innovations over the years have added to the existing institutional planning knowledge base. A literature review revealed 14 planning innovations that have generally been incorporated into successive planning models. Each innovation was evaluated on the basis of comprehensiveness, usefulness, endurance, and whether or not the innovation produced an added dimension that became a basic principle or underlying concept in successive planning models. For each innovation, information is provided on the background, the time periods it was most popular, and implications for higher education. The innovations are as follows: planning, organizing, staffing, directing, coordinating, reporting, and budgeting (POSDCORB); formal planning; long-range planning; master planning; contingency planning; systematic planning; program planning and budgeting systems; program evaluation review technique; management by objectives; Delphi studies; zero-based budgeting; futures research; quality circles; and strategic planning. Seven pages of references are provided as well as 14 appendixes giving a one-page summary for each of the planning innovations. (SW)

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The Evolution of Institutional Planning Models In Higher Education

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for Management Research, Policy Analysis, and Planning

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Ann K. Dickey, Chair
Forum Publications Editorial
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Abstract

The Evolution of Institutional
Planning Models in Higher Education

This study investigated the evolution of the "planning process" from the 1940s to the present, especially as it related to planning for institutions of higher education. The study hypothesized that institutional planning has experienced historical evolution and as a process has exhibited a learning growth curve whereby new planning innovations over the years have added to the existing institutional planning knowledge base. An analysis of the planning literature revealed 14 planning innovations that have generally been incorporated into successive planning models. Each planning innovation identified was critically evaluated on the basis of comprehensiveness, usefulness, endurance, and whether or not the innovation produced an added dimension which became a basic principle or underlying concept in successive planning models.

The Evolution of Institutional Planning Models in Higher Education*

Institutional planning models have evolved systematically in higher education over the last several decades. While a basic planning model has always existed (e.g., needs, goals, objectives, and action steps), new principles and procedures have been added periodically to the basic concepts to make planning more formalized, more structured, and more sophisticated. Thus, rather than being synchronic, planning as a process has experienced a learning growth curve whereby each new innovation, called fads or panaceas by some, has added to the existing institutional planning knowledge base.

The various planning concepts which have been proffered as useful techniques for colleges and universities have typically begun in business, government, or the military and then have been adapted from these sectors to the educational environment.

This study investigated the evolution of the "planning process" from the 1940s to the present time, especially as it related to planning for institutions of higher education. The literature was reviewed both to identify major planning innovations over these years and to search out basic principles and proven concepts which have stood the test of time and have been incorporated into succeeding planning models as the state of the art has progressed. Each planning innovation studied was critically evaluated on the basis of its comprehensiveness, usefulness, and endurance. For example, the

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innovation was examined to determine if it were put forth as a completely new model, wholistic in nature, or if it were presented as limited in scope. Each was examined to see if the model's utility would classify it as highly useful or as an innovation of limited usefulness. Finally, the question was asked: did the model have long or short endurance? The key in the analysis was always whether or not the new planning innovation produced some added dimension which took its place as a basic principle or underlying concept in successive planning models. Thus it was possible for a planning innovation to be included because it was useful but not comprehensive or because it endured but was not of high use at the time.

The study revealed that institutional planning in higher education has experienced historical evolution. This conclusion is in contrast to a tendency to consider each new popular model (e.g., master planning, long-range planning, strategic planning) as distinct and different from the models which preceded it.

In this context a review of the literature of planning over these years identified 14 planning paradigms which at the time gained notoriety and usage and which added a significant dimension to the planning field. These planning innovations and their added dimensions are as follows:

Innovation	Added Dimension
Planning, Organizing, Staffing, Directing, Coordinating, Reporting, and Budgeting (POSDCORB)	Planning as a Management Function
Formal Planning	Discrete Documentation of Planning
Long-Range Planning	Extrapolation Forward and Use of a Planning Specialist

Master Planning	A Look at the Total Picture
Contingency Planning	Asking "What If" with Alternative Solutions
Systematic Planning	How Factors Interrelate
Program Planning and Budgeting Systems (PPBS)	Emphasis on Programmatic Information Rather Than Line Items
Program Evaluation Review Technique (PERT)	Network Analysis
Management by Objectives (MBO)	Emphasis on Results and Accountability
Delphi Studies	Consensus Building
Zero-Based Budgeting (ZBB)	Total Program Justifications
Futures Research	Alternative Scenarios
Quality Circles	Staff Input Into Decision Making
Strategic Planning	Environmental Assessment

Evolution of Planning

While the process of planning can be traced back for centuries, it was Luther H. Gulick in 1936 who as a management scientist studying the proper role of an effective manager laid out seven areas that an administrator should concern him or herself with (Gulick, 1937). The seven areas, in addition to planning, were organizing (establishment of a formal structure), staffing (bringing in and training the needed people), directing (making decisions and embodying them in orders and instructions), coordinating

(interrelating the various parts of the work), reporting (keeping others informed), and budgeting (fiscal allocations and accounting). POSDCORB defined planning as working out in broad outline the tasks that need to be done and the methods for doing them to accomplish the purpose set for the organization (Gulick, 1937). Although Professor Gulick applied most of his early work to public administration, especially the federal government, his research and administrative theory clearly established planning as a function of management. Thus as planning became a legitimate function of college and university administration, POSDCORB became the origin of the planning function for educational institutions as well as government and other non-profit organizations.

Formal planning took shape during and immediately after World War II (Branch, 1966). Wartime efforts and post-war problems created the need to professionalize planning. Formal planning added the dimensions of structure and documentation to the planning process. It moved planning from a broad outline of things to be done and the developing of general methods of doing them to an emphasis on the discipline of planning and the in-depth analyses necessary to enhance decision making and to ensure the best chances for institutional success. As higher education institutions began to expand after World War II and as they became more complex, formal planning became an accepted part of the general administrative processes of colleges and universities.

Long-range planning as a model of planning coincided with the increased use by business and industry of planning specialists within their corporate headquarters. Also, long-range planning began to deal with the longer-term issues which affected the organization's livelihood and

direction. This emphasis was in contrast to traditional or simple planning which dealt with shorter-range, day-to-day problems that confront an organization as a part of its normal function. Long-range planning was defined as a continuous, systematic process of changing present organizational structure and goals so that they more nearly fit anticipated new choices (Horton, 1972). It included developing courses of action addressed to events that may happen in the future and the organization's proposed reactions to them. Extrapolation forward, or extending past trend lines forward, through the use of mathematical forecasting and predictive methods from the quantitative management philosophies became central to long-range planning. Long-range planning institutionalized the role of the planning office and the planning specialist (Branch, 1966). These same principles carried forward as colleges and universities incorporated long-range planning techniques in their administrative processes.

Master planning emerged in the 1950s with the need for organizations to interpret trends and their application to future policy (Reinharth, Shapiro, and Kallman, 1981). It was especially popular among government agencies, businesses, and industries that had large scopes of work and numerous branch sites. Master planning responded to the need for a total organizational plan. It emphasized integration of parts as well as projections into the future (Branch, 1966). It encompassed the broad scope of needs, programs, personnel, budgets, and facilities to provide a unity of purpose for the organization. In addition to data gathering and data analysis, it incorporates recommendations and a blueprint for action. Master planning had special merit for state educational agencies and colleges and universities with multi-campuses (Halstead, 1974). It responded to their need for total systems to intergrate their efforts, avoid

duplication, achieve established policies, and meet future educational needs of their constituent groups.

Contingency planning resulted from the inadequacy of predicting the future based on past events when it was realized that the future is seldom like the past and the occurrence of unpredictable events is a reality of institutional life (Reinharth, Shapiro, and Kallman, 1981). It was designed to shorten the reaction time when unanticipated events occurred. Specifically, contingency planning was the developing of alternative plans with the one chosen depending on the occurrence of a particular set of circumstances (an event that is of possible but uncertain occurrence). Contingency planning applied to colleges and universities in two areas primarily. One was when financial resources began to tighten. Planners were asked, for example, to propose budgets at three levels such as a certain percentage below current level, current level, and a certain percentage above current level. The second was in the area of action steps to take in response to certain developments like those which occurred on many campuses during the student upheavals of the 1960s. The objective was to have a well thought out course of action for as many unpredicted events as possible.

Systematic planning in the late 1950s came out of the general concept of "systems theory" which reflects a set of interrelated parts designed to accomplish a goal or objective with the basic assumption that the total of the parts differs in significant respects from the parts taken separately and that the interaction of the parts is essential to accomplishing the mission (Hill, 1972). Systematic planning regularly examines institutional needs in light of institutional mission (purpose and scope) and either reaffirms the existing mission or modifies it; derives goals and objectives

from the mission statement; develops plans or action steps (program, physical, and financial) which are consonant with the derived goals and objectives; and involves the persons responsible for the implementation of the plans in their development. Systematic planning became applicable to colleges and universities when these institutions increased in complexity and recognized that different parts of the organization affect each other and that change in one part usually creates change in another.

Program Planning and Budgeting Systems (PPBS) was conceptualized by researchers at the RAND Corporation and popularized by Robert McNamara in the United States Department of Defense (Kershaw and McKean, 1959; and Horton, 1972). It was used especially to combine program development with budgeting to explicitly support specific societal objectives. Used extensively in the 1960s in government, it was seen as a way to provide executive and legislative officials with better and more information for making choices, especially when resources are scarce, among competing programs (NEA Committee, 1968). PPBS was an integrated system to provide better and more information for planning programs and for making choices among the different ways financial resources can be used to achieve specified objectives. Planning in a PPBS system is the selection of objectives to be achieved and the analyses of possible courses of action in terms of relative costs and benefits. Programming is deciding on the specific courses of action to carry out planning decisions. Budgeting is translating planning and programming decisions into specific financial needs. PPBS was a popular concept with leaders of government and business who quickly suggested, for accountability reasons, that it be applied by educators to the educational programs supported by society. PPBS had merit for higher education because

it combined planning and budgeting in a way that shifted emphasis from line item budgeting to the financial and educational implications of total programs.

Program Evaluation Review Technique (PERT) was developed primarily in the government and the military (United States Department of Defense and the National Aeronautics and Space Administration) in order to plan and manage the complex and gigantic systems for which they were responsible (Horton, 1972). In nearly every such system, the federal government had to coordinate the efforts of hundreds of governmental and private organizations the work of which must be carried on in parallel and be meshed with the overall effort. PERT is an example of network analysis which is designed to subdivide problems into smaller problems and to identify the branch or interactive relationships between them. It is useful when a program objective is characterized by a large number of interdependent and counterdependent events. Very similar to critical path methods, the key in network analysis is to determine which tasks can be performed in parallel and which cannot. PERT proved to be helpful in the beginning of a new academic program or the development of a new major facility. It was also helpful in research and development (R & D) activities related to higher education.

Management-by-Objectives (MBO) is based on the premise that no individual can direct all the activities of a complex organization (Drucker, 1954). Complex institutions, according to MBO theory, must be managed by outcomes. During the 1950s and early 1960s the thrust of MBO was in the area of performance appraisal. The intent was to move away from how a person approached his or her job (e.g., with enthusiasm) toward the results accomplished. MBO became popular in some colleges and universities in the

early and mid-1970s when the emphasis moved toward making it an integral part of the planning/decision-making process. MBO is a technique whereby the goals of an institution are clearly stated, and measurable objectives are derived from the goals. An individual then agrees to major responsibilities in terms of his or her objectives and the results expected in light of the resources available. During a designated period of time, the person responsible is given wide latitude in choosing a method of achieving the objectives. At the end of the period the actual results are jointly reviewed against the agreed-upon goals and objectives (Odiorne, 1965). Key elements are the participative nature of the process and the accountability factor. The emphasis on outcomes is also signficant.

The Delphi technique was first used about 30 years ago by senior scientist at the RAND Corporation as a forecasting technique (Dalkey and Helmer, 1962). It was used when consensus was needed among a group of experts, who often, because of their background and training, were reluctant to change their positions, especially publicly on highly technical matters. Delphi is a procedure designed to encourage consensus or convergence of opinions from different persons without bringing them together in a face-to-face confrontation. It is an iterative process which usually involves participants making anonymous ratings concerning a series of items, often on a questionnaire, and then getting composite feedback of the way others responded to them. They then respond another time to the same items having the summary information before them. The purpose of additional iterations is to see the extent to which individuals change their views on the basis of more information from peers and the extent of the intensity of their agreement or disagreement. The Delphi technique was used by colleges and

universities in goal setting and/or program development when there was great diversity among key constituent groups or considerable differences of opinion on program needs or direction.

Zero-Based Budgeting (ZBB) was developed by Peter Phyrr and a team of managers in the late 1960s and used in the early 1970s at the Texas Instruments Company (Phyrr, 1973). Phyrr was then asked by Governor Jimmy Carter in 1973 to apply the principles to the State of Georgia. The concept received a great deal of attention when Carter was elected President of the United States in 1976 and promised to use ZBB in the Federal government. Zero-based budgeting is an approach that requires a complete justification of all expenditures each time a new budget is prepared. Rather than use the previous budget as a starting point for the new budget, a "zero-base" is used as the initial assumption. Zero-based budgeting had implications for higher education when the procedure was viewed as a planning system rather than just a budgeting technique. If applied as a planning technique then a college or university could define, study, and select the best alternatives for each fiscal period based on the institution's mission, goals, and objectives. This procedure prevents the automatic continuation of programs or activities which no longer can be justified.

The origin of Futures Research can be traced to the military planning that followed World War II (Enzer, 1983). To avoid military obsolescence, it was necessary for the United States to be the first to develop important new technologies. Technological forecasting techniques were used to guide certain aspects of military planning. In the mid-to-late 1960s planners in non-military areas began to view technological forecasting as a possible way of gaining a better understanding of the changing social environment.

Futures research then spread to other audiences. Futures research is the use of alternative scenarios and analytic procedures in combining forecasts with planning (Enzer, 1983). It utilizes such methods as scenario writing, brainstorming, cross-impact analysis, and relevance analysis for developing informed judgment about long-term future change. It attempts to predict the future with probabilities attached. Institutions of higher education, as agencies of society, became interested in futures research as they saw the need to anticipate future changes in the environment and to develop ways to respond appropriately. Futures research, when combined with other aspects of planning, can allow schools to approach the future with considerably more understanding and confidence.

Quality Circles began in Japan in the early 1960s under the leadership of Kaoru Ishikawa (Metz, 1981). Its roots stem from the post-World War II period when the recognition of a reputation for inferior products spurred the Japanese to seek quality control techniques to increase their world-wide competitiveness. Quality Circles were first used in the United States in 1974 at Lockheed Corporation after a delegation from that company visited Japan to study the concept. Quality Circles are small groups of employees who voluntarily meet together regularly to analyze problems in their areas of activity, to propose solutions to these problems, and to act to implement solutions to the problems when requested to do so (Chase, 1983). It is a participative management/planning technique designed to improve quality, increase productivity, provide costs savings, and improve worker morale. Quality Circles were found to have merit for institutions of higher education when they were used as a participative management activity to enhance team building as a part of institutional planning. It was seen as

a way to get broad-based staff input into an institution's planning and decision-making processes.

The parent of strategic planning is considered to be the Boston Consulting Group which developed management/planning concepts that for the first time offered corporations a systematic means of analyzing the economic and competitive prospects for company operations and for charting a long-term course of action for developing strategies for gaining market share and for determining how to deploy assets (The New Breed, 1985). It provided a way for diversified companies to focus more intensely on the market outlooks and competitive factors for each of their operations. Strategic planning is a continuous and systematic look at an organization, focusing on organizational strengths and weaknesses; assessing the environment in which the organization is competing; and making policy decisions that will position the institution advantageously within its environment. Strategic planning has been seen as advantageous for colleges and universities as the population of the traditional college-age student declined forcing institutions of higher education to be more image conscious, market aware, and more competitive in their student recruitment. Institutions needed a more systematic way to plan for and meet the contingencies of the outside environment. Strategic planning is currently seen as a way to meet this need.

A Typical Planning Model

Current planning models exist in many variations today. While each may emphasize different aspects of planning, the evolutionary nature of planning can be seen as a result of the analysis in this study. For example, a typical planning model contains the following generic components (Winstead, 1982b):

1. Identification of Problems and Opportunities
2. Clarification of Purpose, Goals, and Objectives
3. Assessment of Strengths, Weaknesses, and Threats
4. Assessment of Environment
5. Determination of Priorities
6. Analysis of Capabilities
7. Development and Execution of Programs of Action
8. Identification and Monitoring of Future Developments That Will Have a Major Impact on Performance or Results
9. Allocation of Essential Resources
10. Evaluation of Results
11. Acceptance and Support of Key People Who Are Involved or Affected

Elements of POSDCORB, formal planning, long-range planning, master planning, contingency planning, systematic planning, program planning and budgeting, program evaluation review, management by objectives, convergence (Delphi) techniques, zero-based budgeting, futures research, quality circles, and strategic planning can all be seen in this particular model. For example, Planning, Organizing, Staffing, Directing, Coordinating, Reporting, and Budgeting (POSDCORB) are a part of all of the activities in the process outlined and clearly include planning as a management function. Formal planning is exemplified by the discrete nature of the various planning components. Long-range planning is evidenced by the forward nature of the planning steps listed. Master planning is seen as a result of the comprehensiveness of this particular model. Contingency planning is reflected in the monitoring of the environment and the analysis of capabilities. Systematic planning comes through as each of the component parts of the model interface with each

other. Program Planning and Budgeting Systems (PPBS) is evident in the developing and executing of programs of action and the allocating of essential resources. Program Evaluation Review Technique (PERT) is illustrated by the linkages between the component parts, the priorities setting, and the evaluation efforts. Management-by-objectives (MBO) is seen through the accountability factors connecting goals, objectives, resource allocation and the acceptance and support of key people. Delphi studies can affect goals, priorities, and acceptance and support as consensus is built. Zero-Based Budgeting (ZBB) can be a part of both the determination of priorities and the allocation of resources as programs are justified. Futures Research impacts environmental assessment and the monitoring of future developments. Quality Circles can provide staff input as programs are developed which seek acceptance and support of key people who are involved or affected. Strategic planning encompasses goals, priorities, environmental assessment, capability analysis, program development, resource allocation and constituent support.

Conclusion

This study hypothesized that institutional planning in higher education has experienced historical evolution. That, rather than being synchronic, planning as a process has experienced a learning growth curve whereby new planning innovations over the years have added to the existing institutional planning knowledge base. An analysis of the planning literature over the period beginning in the 1940s and continuing until the present time revealed 14 planning innovations each of which has introduced a new dimension that has generally been incorporated into successive planning models.

There is no one model for planning, however, that can be pulled off the shelf and used by all institutional planners in all situations. The success of any planning model remains the degree of active support by those using the model. There is, as demonstrated by the study, an evolving number of principles and concepts that have emerged over the years which have enhanced the institutional planning knowledge base. These planning innovations as a part of a larger planning model will work under certain circumstances and will not work under others. There is also a wide range of processes and techniques that can be selected to support the various concepts and principles. It is these details that more than likely make the most difference in the effectiveness of a particular planning model. Planning, however, is of an evolutionary nature. Hopefully, planning as a discipline of study will continue to emerge and progress.

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Appendices

PLANNING, ORGANIZING, STAFFING, DIRECTING, COORDINATING, REPORTING AND BUDGETING (POSDCORB)

PLANNING AS A MANAGEMENT FUNCTION

Definition: POSDCORB is an acronym coined by Luther H. Gulick which stands for planning, organizing, staffing, directing, coordinating, reporting, and budgeting. POSDCORB represents, according to Gulick, the functional elements of the total scope of work of an administrator, especially a chief executive officer. Planning, in this context, is working out in broad outline the tasks that need to be done and the methods for doing them to accomplish the purpose set for the organization.

Background: Luther H. Gulick, who at the time (1936) was Professor of Municipal Science and Administration and Director of the Institute of Public Administration at Columbia University, was a management scientist who in studying the proper role of an effective manager laid out seven areas that the administrator should concern him or herself with. They are, in addition to planning, organizing (establishment of a formal structure), staffing (bringing in and training the needed people), directing (making decisions and embodying them in orders and instructions), coordinating (interrelating the various parts of the work), reporting (keeping others informed), and budgeting (fiscal allocations and accounting). Professor Gulick applied most of his early work to public administration, especially the federal government. His research and administrative theory clearly established planning as a function of management.

Most Popular Period: 1930s to 1940s

Implications for Higher Education: If planning is a legitimate function of management and sound management techniques are applicable to institutions of higher education, then planning is an appropriate administrative task for college and university administrators. POSDCORB thus becomes the origin of the planning function for educational institutions as well as government and other non-profit organizations.

Appendix B

FORMAL PLANNING

DISCRETE DOCUMENTATION OF PLANNING

Definition: Formal planning adds the dimensions of structure and documentation to the planning process. It moves planning from broad outlines of things to be done and the developing of general methods of doing them to an emphasis on the discipline of planning and the in-depth analyses necessary to enhance decision making and to ensure the best chances for institutional success.

Background: Formal planning took shape during and immediately after World War II. Wartime efforts and post-war problems created the need to professionalize planning. Many of the planning methodologies which have emerged over the years have roots in the planning activities undertaken during this period of time.

Most Popular Period: 1940s

Implications for Higher Education: As higher education institutions began to expand after World War II and as they became more complex, formal planning became a part of their administrative structures. Planning and all of its implications became accepted parts of the general administrative processes of colleges and universities.

Appendix C

LONG-RANGE PLANNING

EXTRAPOLATION FORWARD AND USE OF A PLANNING SPECIALIST

Definition: A continuous, systematic process of changing present organizational structure and goals so that they more nearly fit anticipated new choices. It includes developing courses of action addressed to events that may happen in the future and the organization's proposed reactions to them.

Background: The move to a greater emphasis on long-range planning coincided with the increased use by business and industry of planning specialist within their corporate headquarters. Also, long-range planning began to deal with the longer-term issues which affected the organization's livelihood and directions. This approach was in contrast to traditional or simple planning which dealt with shorter-range, day-to-day problems that confront an organization as a part of its normal function. Extrapolation forward, or extending past trend lines forward, through the use of mathematical forecasting and predictive methods from quantitative management philosophies became central to long-range planning.

Most Popular Period: 1950s

Implications for Higher Education: Long-range planning institutionalized the role of the planning office and the planning specialist. Planning as a speciality then began to utilize various extrapolation or predictive models as a part of its methodology. The same principles carried forward as colleges and universities incorporated long-range planning techniques in their administrative processes.

Appendix D

MASTER PLANNING A LOOK AT THE TOTAL PICTURE

Definition: Master planning emphasizes integration of parts as well as projections into the future. It encompasses the broad scope of needs, programs, personnel, budgets, and facilities to provide a unity of purpose for the organization. In addition to data gathering and data analysis, it incorporates recommendations and a blueprint for action. A key feature is comprehensiveness as it focuses on the total scope of the enterprise. A master plan indicates how the strategic, administrative, and operating functions of an organization fit together.

Background: Master planning emerged with the need for organizations to interpret trends and their application to future policy. It was especially popular among government agencies, businesses, and industries which have large scopes of work and numerous branch sites. It responded to the need for a total organizational plan.

Most Popular Period: 1950s until early 1960s

Implications for Higher Education: Master planning had special merit for state educational agencies and colleges and universities with multi-campuses. It responds to the need for total systems to intergrate their efforts, avoid duplication, achieve established policies, and meet future educational needs of their constituent groups.

Appendix E

CONTINGENCY PLANNING

ASKING "WHAT IF" WITH ALTERNATIVE SOLUTIONS

Definition: Developing of alternative plans with the one chosen depending on the occurrence of a particular set of circumstances (as event that is of possible but uncertain occurrence).

Background: Resulted from the inadequacy of predicting the future based on past events when it is realized that the future is seldom like the past and the occurrence of unpredictable events is a reality of institutional life. It was designed to shorten the reaction time when unanticipated events occurred.

Most Popular Period: Mid-1950s to mid-1960s

Implications for Higher Education: Applied to colleges and universities in two areas primarily. One was when financial resources began to tighten. Planners were asked, for example, to propose budgets at three levels such as a certain percentage below current level, current level, and a certain percentage above current level. The second was in the area of action steps to take in response to certain developments like those which occurred on many campuses during the student upheavals of the 1960s. The objective was to have a well-thought-out course of action for as many unpredicted events as possible.

Appendix F

SYSTEMATIC PLANNING — HOW FACTORS INTERRELATE

Definition: Planning which regularly examines institutional or university needs in light of institutional mission (Purpose and Scope) and either reaffirms the existing mission or modifies it; derives goals and objectives from the mission statement; develops plans or action steps (Program, Physical, and Financial) which are consonant with the derived goals and objectives; and involves the persons responsible for the implementation of the plans in their development.

Background: Came out of the general concept of "systems theory" which reflects a set of interrelated parts designed to accomplish a goal or objective with the basic assumption that the total of the parts differs in significant respects from the parts taken separately and that the interaction of the parts is essential to accomplishing the mission.

Most Popular Period: Late 1950s to mid-1960s

Implications for Higher Education: Became applicable to colleges and universities with increased complexity and the recognition that different parts of the institution affect each other and that change in one part usually creates change in another.

Appendix G

PROGRAM PLANNING AND BUDGETING SYSTEMS (PPBS)

EMPHASIS ON PROGRAMMATIC INFORMATION RATHER THAN LINE ITEMS

Definition: An integrated system to provide better and more information for planning programs and for making choices among the different ways financial resources can be used to achieve specified objectives. Planning in a PPBS system is the selection of objectives to be achieved and the analyses of possible courses of action in terms of relative costs and benefits. Programming is deciding on the specific courses of action to carry out planning decisions. Budgeting is translating planning and programming decisions into specific financial needs.

Background: PPBS was conceptualized by researchers at the RAND Corporation and popularized by Robert McNamara in the Department of Defense. It was used especially to combine program development with budgeting to explicitly support specific societal objectives. Used extensively in government, it was seen as a way to provide executive and legislative officials with better and more information for making choices, especially when resources are scarce, among competing programs.

Most Popular Period: 1960s

Implication for Higher Education: PPBS was a popular concept with leaders of government and business who quickly suggested, for accountability reasons, that it be applied by educators to the educational programs supported by society. PPBS had merit for higher education because it combined planning and budgeting in a way that shifted emphasis from line item budgeting to the financial and educational implications of total programs.

Appendix H

PROGRAM EVALUATION REVIEW TECHNIQUE (PERT) NETWORK ANALYSIS

Definition: PERT is an example of network analysis which is designed to subdivide problems into smaller problems and to identify the branch or interactive relationships between them. It is useful when a program objective is characterized by a large number of interdependent and counterdependent events. Very similar to critical path methods, the key in network analysis is to determine which tasks can be performed in parallel and which cannot.

Background: Developed primarily in the government and the military (Department of Defense and the National Aeronautics and Space Administration) in order to plan and manage the complex and gigantic systems for which they are responsible. In nearly every such system, the federal government had to coordinate the efforts of hundreds of governmental and private organizations the work of which must be carried on in parallel and be meshed with the overall effort.

Most Popular Period: 1960s

Implications for Higher Education: Helpful in the beginning of a new academic program or the development of a new major facility. Also helpful in research and development (R & D) activities related to higher education.

Appendix I

MANAGEMENT BY OBJECTIVES (MBO) — EMPHASIS ON RESULTS AND ACCOUNTABILITY

Definition: A technique whereby the goals of an institution are clearly stated, and measurable objectives for each organizational unit are derived from the goals. Each person then agrees to major responsibilities in terms of his or her objectives and the results expected in light of the resources available. During a designated period of time, the person responsible is given wide latitude in choosing a method of achieving the objectives. At the end of the period the actual results are jointly reviewed against the agreed-upon goals and objectives. Key elements are the matching of organizational goals with personal goals and the participative nature of the process.

Background: MBO is based on the premise that no individual can direct all the activities of a complex organization. Complex institutions must be managed by outcomes. During the 1950s and early 1960s the thrust of MBO was in the area of performance appraisal. The intent was to move away from how a person approached his or her job (e.g., with enthusiasm) toward the results accomplished.

Most Popular Period: Mid-1960s to mid-1970s

Implications for Higher Education: Became popular in some colleges and universities in the early and mid-1970s when the emphasis moved toward making MBO an integral part of the planning/decision-making process. Two motivating factors were the management of complex organizations and the accountability factor. The emphasis on outcomes was significant.

Appendix J

DELPHI STUDIES — CONSENSUS BUILDING

Definition: A procedure designed to encourage consensus or convergence of opinions from different persons without bringing them together in a face-to-face confrontation. It is an iterative process which usually involves participants making anonymous ratings concerning a series of items, often on a questionnaire, and then getting composite feedback of the way others responded to them. They then respond another time to the same items having the summary information before them. The purpose of additional iterations is to see the extent to which individuals change their views on the basis of more information from peers and the extent of the intensity of their agreement or disagreement.

Background: Delphi was first used about 30 years ago by senior scientists at the RAND Corporation as a forecasting technique. It was used when consensus was needed among a group of experts, who often, because of their background and training, were reluctant to change their positions, especially publicly on highly technical matters.

Most Popular Period: Late 1960s and early 1970s

Implications for Higher Education: Used by colleges and universities in goal setting and/or program development when there is great diversity among key constituent groups or considerable differences of opinion on program needs or direction. Issues involving faculty, administration, students, trustees, etc., often meet these criteria.

Appendix K

ZERO-BASED BUDGETING (ZBB) TOTAL PROGRAM JUSTIFICATIONS

Definition: A budgeting approach that requires a complete justification of all expenditures each time a new budget is prepared. Rather than use the previous budget as a starting point for the new budget, a "zero-base" is used as the initial assumption.

Background: Zero-based budgeting was developed by Peter Phyrr and a team of managers in the late 1960s and used in the early 1970s at the Texas Instruments Company. Phyrr was then asked by Governor Jimmy Carter in 1973 to apply the principles to the State of Georgia. The concept received a great deal of attention when Carter was elected President of the United States in 1976 and promised to use ZBB in the Federal government.

Most Popular Period: Mid-1970s

Implications for Higher Education: Zero-based budgeting has implications for higher education if it is viewed as a planning system rather than just a budgeting technique. If applied as a planning technique, then a college or university can define, study, and select the best alternatives for each fiscal period based on the institution's mission, goals, and objectives. This procedure prevents the automatic continuation of programs or activities which no longer can be justified.

Appendix L

FUTURES RESEARCH ALTERNATIVE SCENARIOS

Definition: The use of alternative scenarios and analytic procedures in combining forecasts with planning. It utilizes such methods as scenario writing, brainstorming, cross-impact analysis, and relevance analysis for developing informed judgments about long-term future change. It attempts to predict the future with probabilities attached.

Background: The origin of futures research can be traced to the military planning that followed World War II. To avoid military obsolescence, it was necessary for the United States to be the first to develop important new technologies. Technological forecasting techniques were used to guide certain aspects of military planning. In the mid-to-late 1960s planners in non-military areas began to view technological forecasting as a possible way of gaining a better understanding of the changing social environment. Futures research then spread to other audiences.

Most Popular Period: 1970s and 1980s

Implications for Higher Education: Institutions of higher education are agencies of society. Therefore, in order to remain relevant, it is desirable for colleges and universities to anticipate future changes and develop ways to respond appropriately. Futures research, when combined with other aspects of planning, can allow schools to approach the future with considerable more understanding and confidence.

Appendix M

QUALITY CIRCLES — STAFF INPUT INTO DECISION MAKING

Definition: Quality Circles are small groups of employees who voluntarily meet together regularly to analyze problems in their areas of activity, to propose solutions to these problems, and to act to implement solutions to the problems when requested to do so. It is a participative management/planning technique designed to improve quality, increase productivity, provide costs saving, and improve worker morale.

Background: Quality Circles began in Japan in the early 1960s under the leadership of Kaoru Ishikawa. Its roots stem from the post-World War II period when the recognition of a reputation for inferior products spurred the Japanese to seek quality control techniques to increase their world-wide competitiveness. Quality Circles started in the United States in 1974 at Lockheed Corporation after a delegation from that company visited Japan to study the concept. The first educational institutions to introduce Quality Circles were community colleges in Oregon and North Carolina in 1981.

Most Popular Period: Early 1980s

Implications for Higher Education: When used as a participative management activity to enhance team building as a part of institutional planning, Quality Circles have merit for institutions of higher education. It can be a way to get broad-based staff input into an institution's planning and decision-making processes.

Appendix N

STRATEGIC PLANNING — ENVIRONMENTAL ASSESSMENT

Definition: A continuous and systematic look at an organization, focusing on organizational strengths and weaknesses; assessing the environment in which the organization is competing; and making policy decisions that will position the organization advantageously within its environment.

Background: The parent of strategic planning is considered to be the Boston Consulting Group (BCG) which developed concepts that for the first time offered corporations a systematic means of analyzing the economic and competitive prospects for company operations and charting a long-term course of action for developing strategies for gaining market share and for determining how to deploy assets. It provided a way for diversified companies to focus more intensely on the market outlooks and competitive factors for each of their operations.

Most Popular Period: Late 1970s to Present

Implications for Higher Education: Seen as advantageous for colleges and universities as the population of the traditional college-age student declined forcing institutions of higher education to be more image conscious, market aware, and more competitive in their student recruitment. Institutions needed a more systematic way to plan for and meet the contingencies of the outside environment. Strategic planning is seen as a way to meet this need.